

# QUALITATIVE ANALYSIS OF MAJOR VERTEBRATE FAUNA FROM WARDHA RIVER BASIN (MAHARASHTRA STATE)<sup>1</sup>

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(With four text-figures)

In view of the proposed coal mining expansion programme in Wardha river basin in Maharashtra State, faunal studies of the river basin were undertaken. An inventory of 392 vertebrate species has been reported along with the status of their current occurrence in the basin. 14 species appear to have become locally extinct/rare/endangered, while 48 are facing the danger of extinction due to progressive degradation of natural habitat in the name of development.

## INTRODUCTION

In response to the request received from the Chairman, Advanced Environmental Management Group set up by the Ministry of Coal, Govt. of India, studies on the occurrence of major vertebrate species from Wardha river basin in Maharashtra State was undertaken in 1988. Wardha river basin is vitally important due to its location in the mineral belt of the Deccan Plateau, especially in the coal belt. The basin accounts for almost the entire amount of coal produced in the state. The status of the important vertebrate species reported in the past from this region was the initial aim. However, considering the importance of the mineral and faunal wealth of the river valley, the scope of the studies was broadened. The present article is based on the report submitted to the Chairman of the AEM group.

## OBJECTIVE

The main objective was to prepare a document on the current status of the major vertebrate species reported in the past from Wardha river basin in the Vidarbha region (Maharashtra State). To achieve this aim, it was first essential to prepare a consolidated faunal inventory from the available past records. For this purpose, group-wise literature was consulted, the details of which have been given

under "VERTEBRATE FAUNA — PAST AND PRESENT." Finally, it was also felt necessary to refer to the latest bibliography, undertake survey for sighting records and consult various experts and local authorities before reporting on the current status of the species mentioned in the faunal inventory.

## LOCATION AND AREA

The Wardha river basin in the Vidarbha region of Maharashtra State lies between 78° & 79° E longitudes and 20° & 22° N latitudes at an average altitude of about 200 m. above msl. It cuts the state in north-south direction (Fig. 1) passing through atleast five districts, namely, Amravati, Nagpur, Wardha, Yavatmal and Chandrapur. Wardha river, a sub-tributary of Godavari river, covers a distance of about 300 km southwards after its origin on Betul plateau in Madhya Pradesh and meets Wainganga river to form Pranhita which, in turn, ultimately meets the Godavari river near Sironcha in Chandrapur district.

## SURVEYS

Rapid surveys were undertaken at selected places of faunal importance along the entire course of the Wardha river. The major centres of the surveys are shown in Fig 2. Such surveys were conducted in a span of two years (1988, 1989) with the help of the authorities from Western Coalfield Ltd., Nagpur and officials from Forest Offices at Amravati,

<sup>1</sup>Accepted February, 1994

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Yavatmal, Chandrapur and Gadchiroli. Scientists from Punjabrao Krishi Vidyapeeth, Akola and District Fisheries Office at Chandrapur were also consulted for information on fishes.

#### WARDHA RIVER BASIN

**General:** The most important tributary-basin that forms a part of the larger Godavari river system

is of Wardha and Wainganga rivers in eastern Maharashtra. Wardha river emerges from the southern slopes of Satpura ranges, more specifically from Betul plateau, east of Multai ( $78^{\circ}$  E longitude) in Madhya Pradesh. The river takes a long and tortuous course along the Satpura Hills. The Wardha river basin runs in south-easterly direction (Fig. 1) and has undulating plains of fertile soil in its

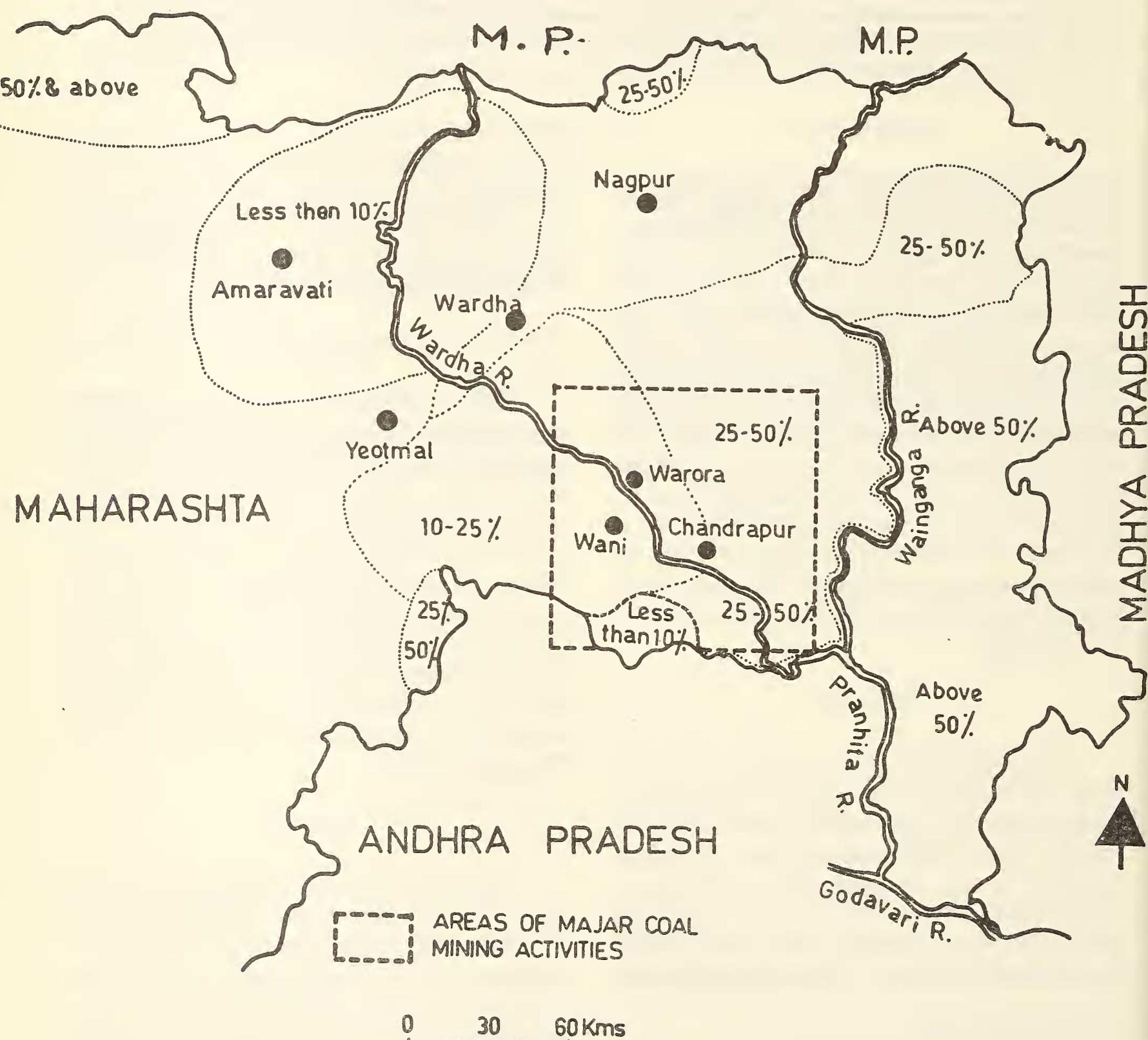


Fig. 1. Course of Wardha river and existing forest cover (in percentage) in Eastern part of Maharashtra state

neighbourhood. The course is quite zigzag after the origin and forms the border for atleast five districts of Maharashtra State. While the upper Wardha plain is an agricultural country, the lower part of the basin has the distinction of having the only coal-belt of the State and a considerable forest area with fairly rich wildlife.

The river, after descending from the Satpura ranges, passes along Ashti Forest Range in Wardha Dist. and flows on plains along Ajanta range in Yavatmal Dist. Later, the river course traverses rich coalfield areas near Rajur, Wani and Ghugus in Yavatmal Dist. and Warora, Ballarpur and Rajura in Chandrapur Dist. (Fig. 2). The confluence of the Wardha and Wainganga rivers in Gadchiroli Dist. is known as Pranhita river which ultimately meets the Godavari near Sironcha on the Maharashtra-Andhra Pradesh border.

**Climate:** The overall climate of the region is dry and extreme. It belongs to the tropical savannah type. The average minimum temperature is around 15°C in winter, while the highest temperature goes upto 45°C in summer in the areas around the thermal power station at Durgapur. However, summer evenings are cooler.

The eastern part of Maharashtra receives rains from the southwest as well as northeast monsoons. Obviously, the annual rainfall in Chandrapur Dist. (1000-2000 mm), is more than in Yavatmal Dist. (400-1000 mm). On an average, the two districts have 50-75 rainy days in a year.

**Soil:** The river valley has black and red soil. Upper Wardha valley has the agriculturally rich and fertile black cotton soil, whereas the lower basin is very rich in coal deposits, and also in minerals like manganese, iron, copper, etc. The coal deposits are mostly concentrated in Chandrapur and Yavatmal districts (Dikshit, 1985).

**Mining activities:** Large scale coal mining is already in progress in areas like Ghugus, Manjari, Durgapur and Ballarpur (Ballarshah). Fig. 2 shows encircled areas which include various existing and proposed coalfield projects (open cast mines) in Wardha river valley. The figure also shows that the mining activities extend over the dense forest cover

in the two districts which form excellent habitat for rich and varied wildlife. The major drawback of the open cast coal mining system is that it destroys not only the habitat from where the coal is mined out but it also affects the adjacent habitats where the waste is dumped.

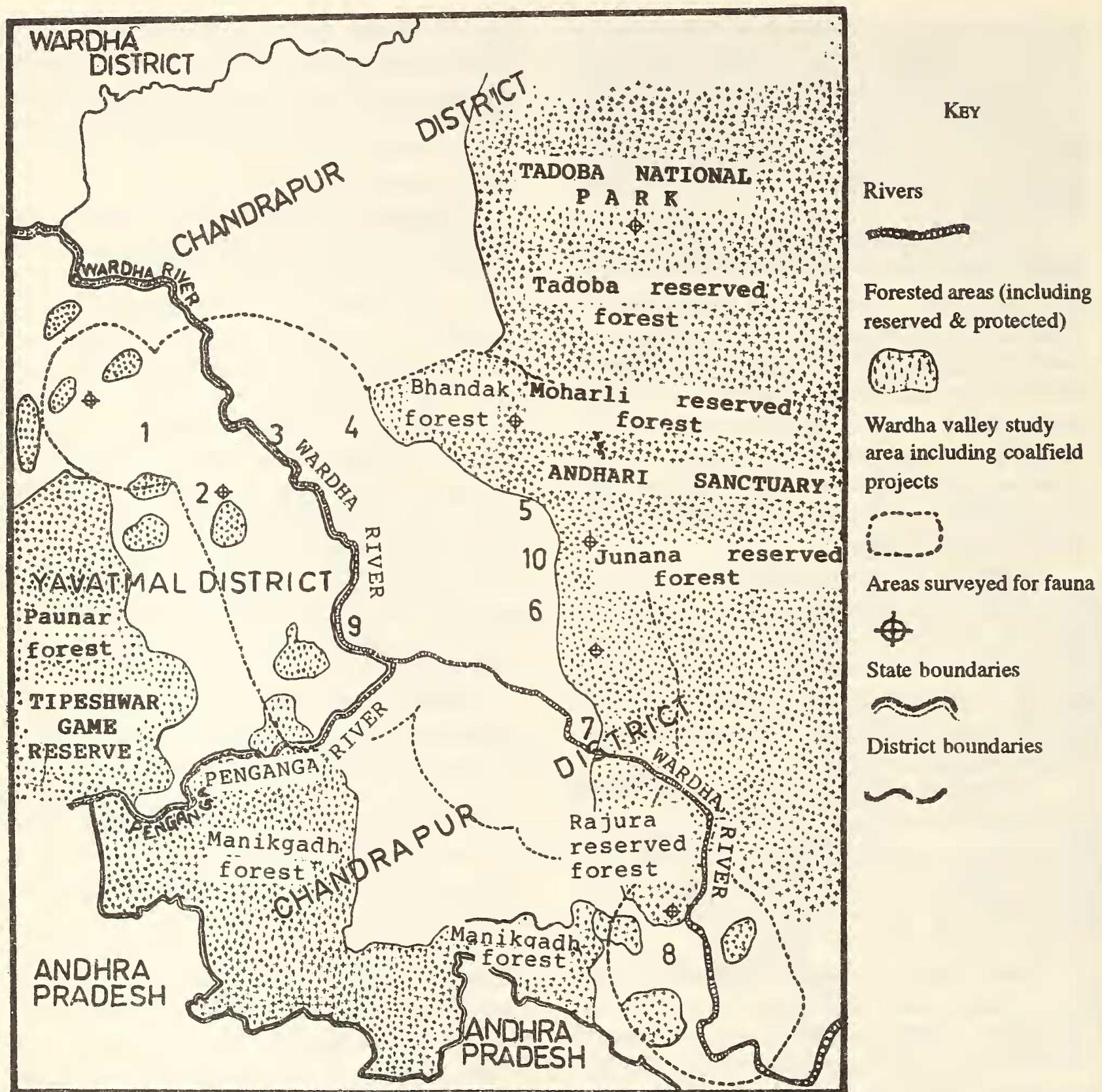
#### Sanctuary, National Park and Game Reserve:

The lower Wardha river basin and its adjacent environs form such a wonderful habitat for wildlife that most of it has been reserved for the protection of vulnerable species like tiger, four-horned antelope, flying squirrel, ratel, gaur, sloth bear, lesser florican, python, etc. Tadoba National Park with an area of 117 sq. km is within 15 km of Chandrapur city and only a few km away from the Durgapur Thermal Power Station. All along the eastern side of the Chandrapur-Ballarpur belt, the newly formed Andhari Sanctuary with an area of about 520 sq. km is spread in the northsouth direction (Fig 2). The Tippeshwar Game Reserve with an area of about 225 sq. km is situated about 50-60 km away on the western side of Wani town.

**Forest cover:** Parts of eastern Maharashtra with existing forest cover (in percentage range) have been depicted in Fig 1. The forest in the Wardha river basin in Chandrapur and Yavatmal districts alone accounts for 30-35% of the entire state forest. The forest, mixed and dense, mostly belongs to Southern Tropical Dry Deciduous type (Champion and Seth, 1968) in the region where rainfall is less than 1000 mm, whereas it is Moist Deciduous type (Champion and Seth, 1968) in the rainfall zone of 1500-2000 mm. There is an abundant growth of wild bamboo species (*Dendrocalamus strictus*) at a number of places. Dominant plant species are teak (*Tectona grandis*), ain (*Terminalia tomentosa*), arjun (*Terminalia arjuna*), dhavada (*Anogeissus latifolia*), sal (*Shorea robusta*), shisham (*Dalbergia latifolia*), tendu (*Diospyros melanoxylon*), haldu (*Adina cordifolia*) etc. Cotton, rice and jowar are the predominant crops grown in this region.

#### VERTEBRATE FAUNA — PAST AND PRESENT

As stated earlier, the region exhibits a very



1. Rajur (Yavatmal Dist.)
2. Wani Town
3. New Majri open cast mines
4. Bhandak (Bhadravati)
5. Durgapur Coal mines & thermal power station
6. Chandrapur City
7. Ballarpur Coal mines
8. Wirur Town
9. Ghugus Coal mines
10. Chanda Rayatwari mines

Fig. 2 Parts of Yavatmal and Chandrapur district showing Wardha river valley coalfield and forest areas.

rich faunal diversity in vertebrate species (Fig 3). With only a few exceptions like wild buffalo and swamp deer, most of them are still found to be freely moving in the forested areas due to the continuity in forest cover from north to south in Chandrapur and Gadchiroli districts. About 55 out of 355 species reported in the past from Wardha river basin appear to have been threatened with local extinction.

Appendix II gives a complete account of the current status of major vertebrate species reported from Wardha river basin in the past. The comparative account of the specific status was prepared by referring to the available bibliography. Some of them are: Fauna Gazetteer for Maharashtra State Anon. (1974); Pocock (1939, 1941); Ellerman and Morrison-Scott (1951); Brander (1982); Prater (1980); Ali (1961); Khajuria and Ghosal (1981); Daniel (1983); Anon. (1986); Brosset (1962); Murthy (1985); Chitampalli (1980); Divekar *et al.* (1983); Ripley (1961); Inger and Dutta (1987); Kulkarni (1975); Pradhan (1978); Talwar and Jhingran (1991); Talwar (1991). Field trips for actual sightings and detailed discussions with experts in relevant subjects and also with the local authorities proved to be extremely useful at the time of compiling the data on faunal status. Faunal inventory prepared during the current studies was shown to the experts on various groups for updating the information. The following is the group-wise list of experts consulted:

1. Mammalia : M.S. Pradhan
2. Aves : M. Chitampalli, Ex-Dy. Director, Melghat Tiger Project, Paratwada and Shri Ramanand, A.C.F., Chandrapur.
3. Reptilia : M.S. Pradhan, with the help of forest Amphibia authorities and after consulting available bibliography.
4. Pisces : M.S. Pradhan, K.B. Dabhade, Asso. Prof., P.K.V. Akola and Experts from Dist. Fish Office, Chandrapur.

### **Species under Wildlife Act (Amend. 1991)**

**Schedule:** As per the Wildlife Act, 51 vertebrate species mentioned in the Appendix-II belong to Schedule I and Part II of Schedule II (Fig. 4). These species are endangered and locally threatened with extinction. Out of the 235 scheduled vertebrate species, 57 are mammalian, 160 are avian and 18 are reptilian and amphibian species. Besides these, 11 fish species have also been treated as threatened Talwar (1991).

### **OBSERVATIONS BASED ON CURRENT STUDIES**

Appendix I gives group-wise record of vertebrate species from Wardha river basin, while Appendix II gives a detailed inventory of 392 species belonging to five vertebrate classes. Out of these, 14 species are locally extinct/rare/endangered (Appendix III) and 58 are facing the danger of local extinction from degradation of the natural habitat. The target groups are mammals and birds (Fig. 4). Wild buffalo and swamp deer have already disappeared from Chandrapur district due to increased industrial activities and disturbances on a large scale. Sensitive species like tiger, giant squirrel, flying squirrel, sloth bear, ratel, four horned antelope, python etc. are also known to inhabit the dense forested areas of the district and adjoining areas. Destruction of natural habitats on a large scale threatens the lesser known species also, like the Narmada rat, lesser florican, falcon, owlet, monitor lizard, rufescent burrowing frog, humped feather-back fish, chameleon fish and a few more which form part of the food chain. Any damage to such a fragile ecosystem will result in irreparable loss and affect the survival of sensitive species in the region.

Fig. 2 shows the areas where mining activities are already in progress. If these developments are extended further deep inside Moharli, Junana and Rajura reserved forests, they may damage the habitat and restrict the movement of wildlife in Chandrapur district. Rajura reserved forest forms a bottleneck between Junana and Manikgadh forests. If this region is protected it will help in establishing a corridor for free movement of the wildlife.

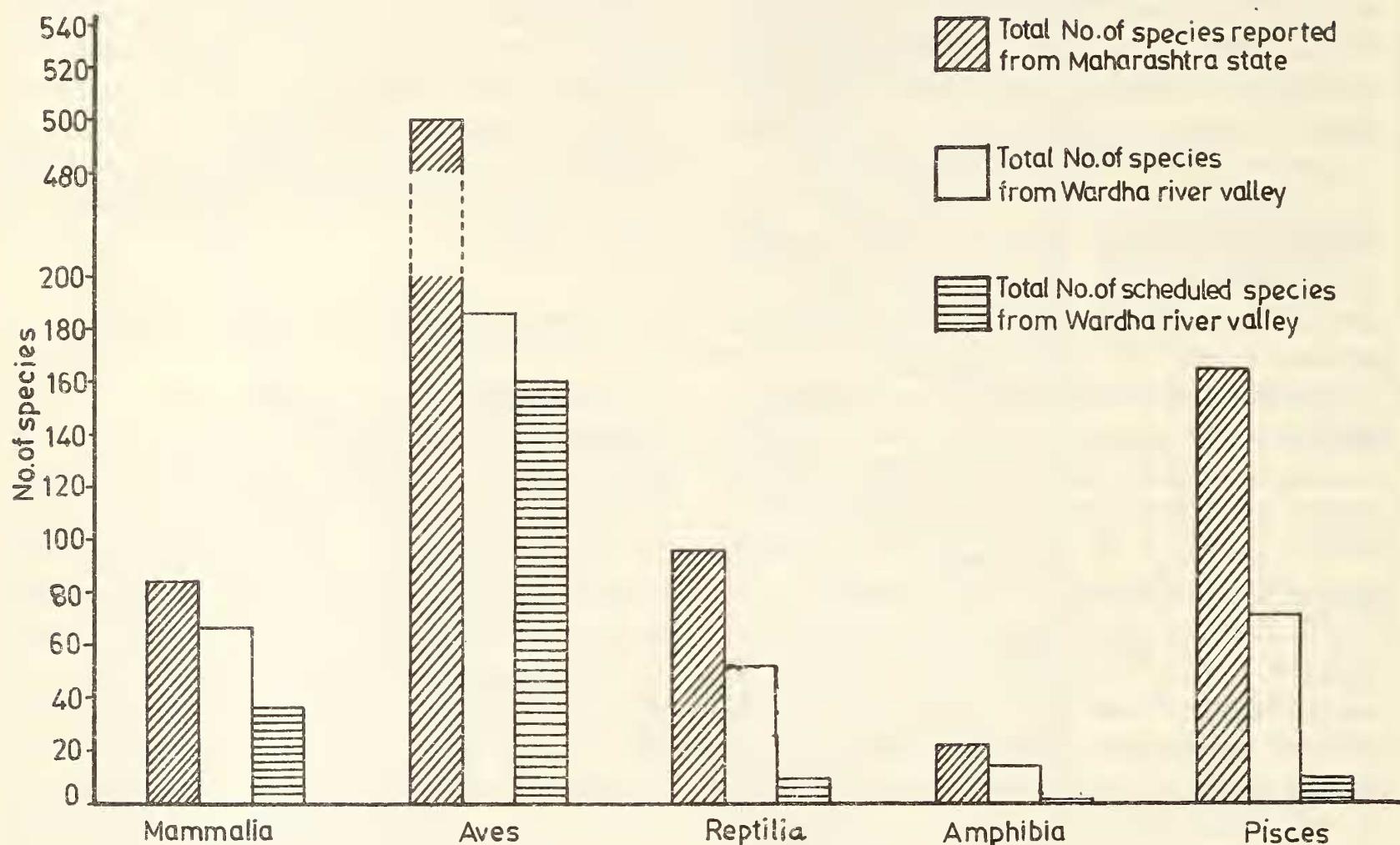


Fig. 3. Graph showing total no. of major vertebrate species.

#### CONCLUSION

1. Appendix I clearly shows that 14 out of 392 vertebrate species reported from Wardha river basin have either become locally extinct or rare due to degradation of natural habitats at a number of places. These are listed in Appendix III.

2. Wildlife in the region is represented by some of the most sensitive species like tiger, giant squirrel, flying squirrel, sloth bear, ratel, gaur, four horned antelope, lesser florican, sarus crane and flamingo. Four horned antelope was sighted in the forest, 2 km away from Durgapur Thermal Power Station.

3. About 32 vertebrate species belonging to Schedule I of the amended Wildlife Act (1986 & 1991) are still known to occur in Wardha river basin.

4. In all, 58 species (those species which are

listed under Schedule I & II (II) of Wildlife Act and threatened and endangered categories of IUCN in Appendix II) are facing the danger of local extinction and need protection for their immediate conservation.

5. Wardha river, being a part of the Godavari river basin, possesses very good ichthyofauna. However, seven species of fish have also been considered as threatened species.

6. Survival of the nearly extinct, rare or endangered species is seriously threatened due to over-exploitation of the natural habitats from all sides of the entire river basin. If the present downward trend in the abundance of vertebrate species continues it will affect the local food chain and ultimately impair biodiversity and in turn the gene pool of the region.

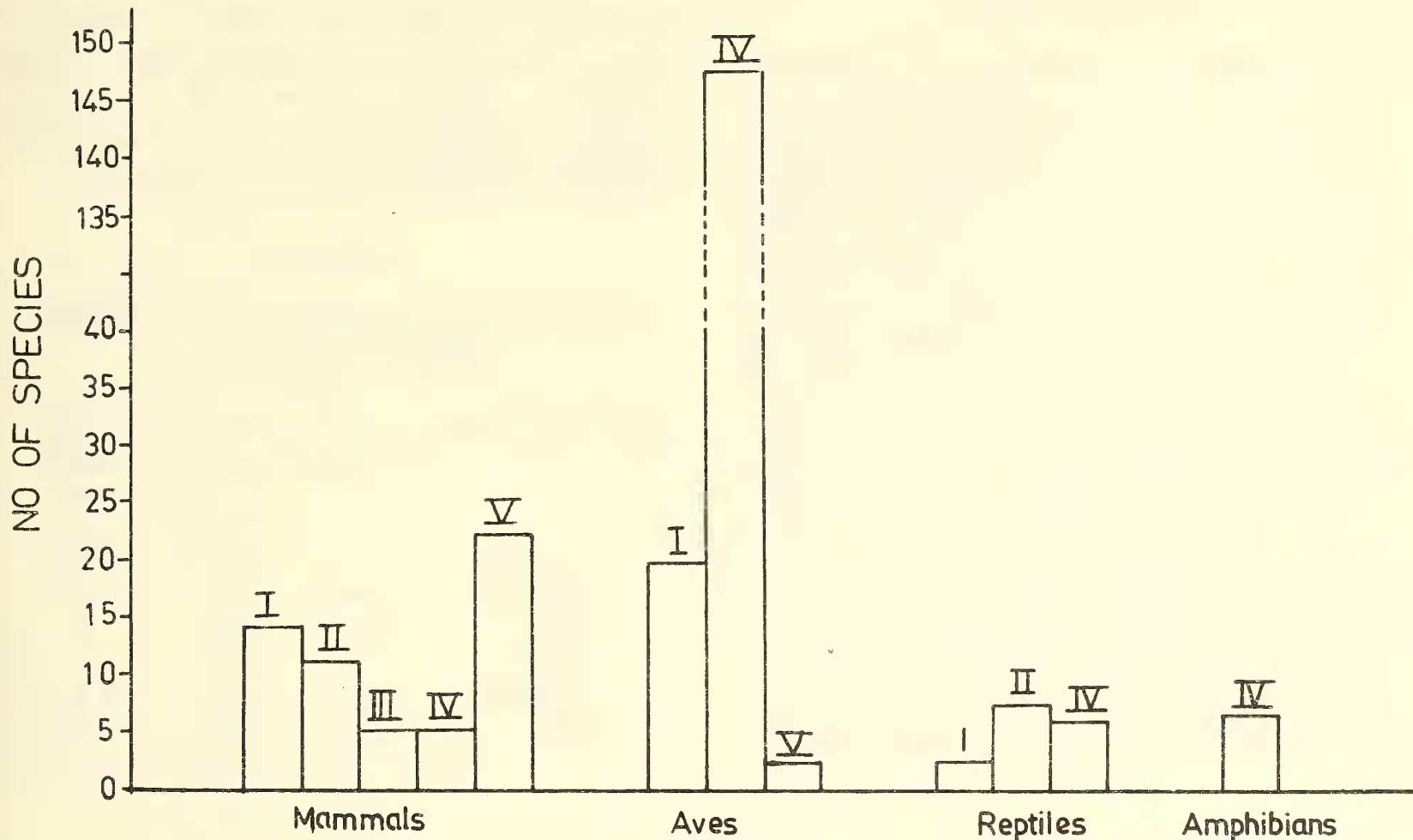


Fig. 4. Graph showing wildlife schedule-wise distribution of major vertebrate species.

7. The practice of open cast mining should not be encouraged further, as it will definitely cause long lasting damage to the natural habitats and will also be detrimental to the arboreal, terrestrial and subterrestrial fauna. Besides, regeneration is a very slow process and does not guarantee restoration of the original biodiversity. Hence, it is time to work out an alternative to open cast mining if one really wants to stop the onslaught on the environment.

8. Considering the richness of the natural resources in physical, mineral and biological components of Wardha river basin, one expects that it is possible to plan its sustainable development for the human race without impairing the total gene pool.

9. Further studies can be concentrated on the relative abundance and population status of selected species, particularly threatened ones reported in the

present inventory. This may help in the restoration of some of the species in the undisturbed habitats of this region.

10. One national park (Tadoba National Park), one wildlife sanctuary (Andhari Sanctuary) and one game reserve (Tippeshwar) are situated in the close vicinity of the coal belt (Fig. 2). Converting Tippeshwar Game Reserve into a sanctuary under the amended Wildlife Act (1991), so that more undisturbed area is available to the wildlife for its propagation, is strongly suggested.

11. If Rajura reserved forest and its adjoining areas are afforded proper protection, a corridor between Junana and Manikgadh forests will be established for the free movement of wildlife.

12. Finally, it is imperative on our part to adopt stringent conservation measures in the Wardha-

Wainganga tributary basin to check over-exploitation of the available natural resources in the name of development.

#### ACKNOWLEDGEMENTS

My sincere thanks are due to the Director, Zoological Survey of India, Calcutta, for permission to undertake the studies and also to the Officer-in-Charge, Zoological Survey of India, Western Regional Station, Pune, for providing necessary facilities. I gratefully acknowledge the help and cooperation extended by Shri Dange, Joint Director, and other officials from Wardha Valley Coalfield Ltd., Nagpur and Chandrapur, Shri M.B. Chitampalli, Ex-Deputy Director, Melghat Tiger Project, Paratwada, Shri P.D. Ambaskar, Conservator of Forests, South Chandrapur Circle, Shri A.K. Nigam, Deputy Conservator of Forests, Tadoba National Park, Shri M.N. Athawale, Dy. Conservator of Forests, Shri Banot, A.C.F., Tadoba National Park, Chandrapur, Shri Ramanand, A.C.F., Chandrapur, Shri Manohar Sapre, Environmentalist, Chandrapur, Dr. K.B. Dabhade, Associate

Prof., P.K.V., Akola, Experts from Dist. Fisheries Office, Chandrapur and a number of local people and tribals towards completion of the studies.

Finally, I also wish to thank Dr. G.M. Yazdani, Scientist-SE & Officer-in-Charge, Zoological Survey of India, Western Regional Station, Pune and Dr. V.C. Agrawal, Scientist-SF, Zoological Survey of India, Calcutta, for going through the manuscript and offering valuable suggestions.

#### Appendix I

##### STATUS OF MAJOR VERTEBRATE SPECIES FROM WARDHA RIVER BASIN

Sl. No.	Name of Group	Past Record	Present Record	No of spp. locally extinct or rare
1.	Mammalia	64	62	2
2.	Aves	193	188	5
3.	Reptilia	52	49	3
4.	Amphibia	11	10	1
5.	Pisces	72	70	2

## Appendix II

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status	Remarks
					Schedule (IUCN)	(part)	
1.	2	3	4	5	6	7	8
<b>Class: MAMMALIA</b>							
Order: INSECTIVORA							
	Family: ERINACEIDAE						
	Subfamily: Erinaceinae						
1.	Indian hedgehog	<i>Paraechinus microtis</i> ( <i>nudiventris</i> )	?	+	-	-	Sighting by Forest officials.
2.	House shrew	<i>Suncus murinus</i> (Linn.)	+	+	-	-	Sighting
3.	Savi's Pigmy shrew	<i>Suncus etruscus</i> Savi	+	+	-	-	Sighting
4.	Tree shrew	<i>Anathana ellioti</i> Waterhouse	+	+	-	-	Sighting
Order: CHIROPTERA							
	Family: PTEROPODIDAE						
5.	Leschenault's fruit bat	<i>Rousettus leschenaultii</i> (Desmarest)	+	+	V	-	
6.	Indian flying fox	<i>Pteropus giganteus</i> (Brunnich)	+	+	V	-	Sighting
7.	Short-nosed fruit bat	<i>Cynopterus sphinx</i> (Vahl.)	+	+	V	-	
8.	Hardwicke's rat-tailed bat	<i>Rhinopoma hardwickii</i> Grey	+	+	V	-	
9.	Long-armed tomb bat	<i>Taphozous longimanus</i> Hard.	+	+	V	-	
10.	Bearded-tomb bat	<i>Taphozous melanopogon</i> Temminck	+	+	V	-	
11.	Malay false vampire bat	<i>Megaderma spasma</i> (Linn.)	+	+	V	-	
12.	Indian false vampire bat	<i>Megaderma lyra</i> Geof.	+	+	V	-	

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past	Present	Wildlife	Current	Remarks
			Record	Record	Act ('91)	Status	
			4	5	6	7	8
<b>Family: RHINOLOPHIDAE</b>							
13.	Roux's horse-shoe bat	<i>Rhinolophus rouxi</i> Temm.	+	+	V	-	-
14.	Leaf-nosed bat	<i>Hipposideros speoris</i> (Schn.)	+	+	V	-	-
15.	Bicoloured leaf-nosed bat	<i>Hipposideros bicolor</i> (Temm.)	+	+	V	-	-
<b>Family: VESPERTILIONIDAE</b>							
16.	Dormer's bat	<i>Pipistrellus dormeri</i> (Dobson)	+	+	V	-	-
17.	Kelaart's pipistrelle	<i>Pipistrellus ceylonicus</i>	+	+	V	-	-
18.	Pygmy pipistrelle	Wroughton			,		
19.	-	<i>Pipistrellus minus</i> Wroughton	+	+	V	-	-
20.	Indian painted bat	<i>Miniopterus schreibersi</i> (Kuhl)	+	+	V	-	-
<b>Order: PRIMATES</b>							
<b>Family: CERCOPITHECIDAE</b>							
21.	Rhesus macaque	<i>Macaca mulatta</i> (Zimmer.)	+	+	II(I)	-	Sighting
22.	Hanuman langur	<i>Presbytis entellus</i> (Duf.)	+	+	II(I)	-	Sighting
<b>Order: CARNIVORA</b>							
<b>Family: CANIDAE</b>							
23.	Jackal	<i>Canis aureus</i> (Linn.)	+	+	II(I)	V	-
24.	Wolf	<i>Canis lupus</i> (Linn.)	+	+	I	V	-
25.	Indian Fox	<i>Vulpes bengalensis</i> (Shaw)	+	+	II(II)	V	Sighting
26.	Dhole or Wild dog	<i>Cuon alpinus</i> (Pallas)	+	+	II(I)	V	Sighting
		(In Chandrapur Dist. only)					
<b>Family: URSIDAE</b>							
27.	Sloth Bear	<i>Melursus ursinus</i> (Shaw)	+	+	I	V	Sighting
<b>Family: MUSTELIDAE</b>							
28.	Indian Ratel	<i>Mellivora capensis</i> (Schreben)	+	+	I	V	Sighting by Forest officials
29.	Smooth-coated otter	<i>Lutra perspicillata</i> (Geof.)	+	+	III	V	Sighting by Forest officials

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past	Present	Wildlife	Current	Remarks
			Record	Record	Act ('91)	Schedule	(IUCN)
1	2	3	4	5	6	7	8
<b>Family: VIVERRIDAE</b>							
30.	Small Indian civet	<i>Viverricula indica</i> (Desmarest)	+	+	V	-	-
31.	Palm civet (Toddy cat)	<i>Paradoxurus hermaphroditus</i> (Pallas)	+	+	II(II)	V	-
<b>Family: HERPESTIDAE</b>							
32.	Indian common mongoose	<i>Herpestes edwardsi</i> (Geof.)	+	+	IV	-	Sighting
<b>Family: HYAENIDAE</b>							
33.	Striped hyena	<i>Hyaena hyaena</i> (Linn.)	+	+	III	V	Sighting
<b>Family: FELIDAE</b>							
34.	Leopard cat	<i>Felis bengalensis</i> Kerr	+	+	I	V	-
35.	Jungle cat	<i>Felis chaus</i> Guldent.	+	+	II(II)	V	Sighting
36.	Desert cat	<i>Felis silvestris</i> Gray	+	+	I	V	Sighting
37.	Leopard/Panther	<i>Panthera pardus</i> (Linn.)	+	+	I	V	Sighting
38.	Tiger	<i>Panthera tigris</i> (Linn.)	+	+	I	V	Sighting
<b>Order: ARTIODACTYLA</b>							
<b>Family: SUIDAE</b>							
39.	Wild boar	<i>Sus scrofa</i> Linn.	+	+	-	-	-
<b>Family: TRAGULIDAE</b>							
40.	Mouse Deer or Indian Chevrotain	<i>Tragulus meminna</i> (Erxleb.)	+	+	I	V	-
<b>Family: CERVIDAE</b>							
41.	Barking deer or Indian muntjac	<i>Muntiacus muntjak</i> (Zimmer.)	+	+	III	-	-
42.	Spotted deer	<i>Axis axis</i> (Erxleb.)	+	+	III	-	Sighting
43.	Swamp Deer or Barasingha	<i>Cervus duvauceli branderi</i> (Pocock) (In Chandrapur	+	A	I	E	-

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status (IUCN)	Remarks
1	2	3	4	5	6	7	8
44.	Sambar	<i>Cervus unicolor</i> Kerr	Dist. only	+	III	-	Sighting
45.	Family: BOVIDAE Nilgai/Blue Bull	<i>Boselaphus tragocamelus</i> (Pallas)	+	+	III	-	Sighting
46.	Four-horned antelope	<i>Tetraceros quadricornis</i> (Blain)	+	+	I	V	Sighting
47.	Indian Black buck	<i>Antilope cervicapra</i> (Linn.)	+	+	I	E	Sighting by Forest officials
48.	Indian Gazelle	<i>Gazella bennettii</i> = <i>Gazella dorcas</i> (Linn.)	+	+	I	-	-
49.	Wild Buffalo	<i>Bubalus amee</i> = <i>Bubalus bubalis</i> (Linn.)	+	A	I	E	-
50.	Indian Gaur	<i>Bos gaurus</i> H. Smith (In Chandrapur Dist. only)	+	+	I	V	Sighting
	Order: PHOLIDOTA						
51.	Family: MANDAE Indian Pangolin	<i>Manis crassicaudata</i> Gray	+	+	I	I	-
	Order: RODENTIA						
52.	Family: SCURIDAE Five striped squirrel	<i>Funambulus pennanti</i> Wroughton	+	+	IV	-	Sighting
53.	Three striped squirrel	<i>Funambulus palmarum</i>	+	+	-	-	Sighting
54.	Indian Giant squirrel	<i>Robertsoni Wroughton</i> <i>Ratufa indica centralis</i> (Erxleb.)	+	+	II(I)	-	Sighting
55.	Indian Flying squirrel	<i>Petaurista petaurista</i> <i>philippensis</i> (In Chandrapur Dist. only)	+	+	II(II)	-	-
	Family: MURIDAE						

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status (IUCN)	Remarks
1	2	3	4	5	6	7	8
56.	Indian gerbil rat	<i>Tatera indica</i> (Hardwicke)	+	+	V	-	-
57.	House rat	<i>Rattus rattus rufescens</i> (Gray)	+	+	V	-	Sighting
58.	House rat	<i>Rattus rattus narbadae</i> Hinton	+	?	V	-	-
59.	House mouse	<i>Mus musculus castaneus</i>	+	+	V	-	-
		Waterhouse					
60.	Little Indian field mouse	<i>Mus booduga</i> Gray	+	+	V	-	-
61.	Lesser bandicoot rat	<i>Bandicota bengalensis</i> (Gray)	+	+	V	-	Sighting
62.	Larger bandicoot rat	<i>Bandicota indica</i> (Bech.)	+	+	V	-	Sighting
		Family: HYSTRICIDAE					
63.	Indian Porcupine	<i>Hystrix indica</i> Kerr	+	+	IV	-	Sighting
		Order: LAGOMORPHA					
64.	Indian hare	<i>Lepus nigricollis</i> F. Cuv.	+	+	IV	-	Sighting
		Class: AVES					
		Order: PODICIPEDIFORMES					
		Family: PODICIPEDIDAE					
1.	Great crested grebe (WB, M)	<i>Podiceps cristatus</i> (Linn.)	+	+	IV	-	Present record is based on checklist published by DFO, Tadoba National Park, Chandrapur (1986).
2.	Little grebe (WB, M)	<i>Tachybaptus ruficollis</i> (Pallas)	+	+	IV	-	- do -
		Order: PELECANIFORMES					- do -
		Family: PHALACROCORACIDAE					
3.	Little cormorant (WB, M)	<i>Phalacrocorax niger</i> (Vieillot)	+	+	IV	-	
4.	Darter or Snake bird (WB, M)	<i>Anhinga rufa</i> (Daudin)	+	+	IV	-	
		Order: CICONIIFORMES					
		Family: ARDEIDAE					

## Appendix II (continued)

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status (IUCN)	Remarks
					Schedule (part)		
1	2	3	4	5	6	7	8
25.	Comb Duck (WB, M)	<i>Sarkidiornis melanotus</i>	+	+	IV	-	— do —
<b>Order: FALCONIFORMES</b>							
	Family: ACCIPITRIDAE						
26.	Blackwinged kite (BOP, R)	<i>Elanus caeruleus</i> (Desfontaines)	+	+	I	-	— do —
27.	Pariah kite (BOP, R)	<i>Milvus migrans</i> (Bodd.)	+	+	I	-	— do —
28.	Brahminy kite (BOP, R)	<i>Haliastur indus</i> (Bodd.)	+	+	I	-	— do —
29.	Indian Shikra (BOP, R)	<i>Accipiter badius</i> (Gmelin)	+	+	I	-	— do —
30.	Sparrow Hawk (BOP, M)	<i>Accipiter nisus</i>	?	+	I	-	— do —
31.	White-eyed Buzzard-Eagle (BOP, R)	<i>Butastur teesa</i> (Franklin)	?	+	I	-	— do —
32.	Crested Hawk-Eagle (BOP, R)	<i>Spizaetus cirrhatus</i> (Gmelin)	+	+	I	-	— do —
33.	Hodgson's Hawk-Eagle (BOP, M)	<i>Spizaetus nipalensis</i>	?	+	I	-	— do —
34.	Tawny Eagle (BOP, R)	<i>Aquila rapax</i> (Temminck)	+	+	I	-	— do —
35.	Grey headed Fish Eagle (BOP, R)	<i>Ichthyophaga ichthyaetus</i> (Horsefield)	+	+	I	-	— do —
36.	White-backed vulture (BOP, LM)	<i>Gyps bengalensis</i> (Gmelin)	+	+	I	-	— do —
37.	Scavenger vulture (BOP, LM)	<i>Neophron percnopterus</i> (Linn.)	+	+	I	-	— do —
38.	Pallid or Pale Harrier (BOP, M)	<i>Circus macrourus</i> (Gmelin)	+	+	I	-	— do —
39.	Marsh Harrier (BOP, M)	<i>Circus aeruginosus</i> (Linn.)	+	+	I	-	— do —
40.	Short-toed Eagle (BOP, R)	<i>Circaetus gallicus</i> (Gmelin)	+	+	I	-	— do —
41.	Crested serpent Eagle (BOP, R)	<i>Spilornis cheela</i> (Latham)	+	+	I	-	— do —
42.	Lagger falcon (BOP, R)	<i>Falco biarmicus jugger</i> (Gray)	+	?	-	E	— do —
43.	Peregrine falcon (BOP, M)	<i>Falco peregrinus</i> (Trunstall)	+	+	IV	-	— do —
44.	Kestrel (BOP, M)	<i>Falco tinnunculus</i> (Linn.)	?				— do —
<b>Order: GALLIFORMES</b>							
	Family: PHASIANIDAE						
45.	Painted partridge (GB, R)	<i>Francolinus pictus</i> (Jard. & Selby)	+		IV	-	— do —
46.	Grey partridge (GB, R)	<i>Francolinus pondicerianus</i> (Gmelin)	+		IV	-	— do —
47.	Grey quail (GB, R)	<i>Colurnix coturnix</i> (Linn.)	+		IV	-	— do —
48.	Black-breasted quail or	<i>Colurnix coromandelica</i>	+		IV	-	— do —

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past	Present	Wildlife	Current	Remarks
			Record	Record	Act ('91)	Status (IUCN)	
1	2	3	4	5	6	7	8
	rain quail (GB, R)						
49.	Jungle Bush quail (GB, R)	<i>Perdicula asiatica</i> (Latham)	+	+	IV	-	— do —
50.	Grey jungle-fowl (GB, R)	<i>Gallus sonneratii</i> (Temm.)	+	+	IV	-	— do —
51.	Red Jungle fowl (GB, R)	<i>Gallus gallus</i> Linn.	+	+	IV	-	— do —
52.	Peafowl (GB, R)	<i>Pavo cristatus</i> Linn.	+	+	I	-	— do —
53.	Red spurfowl (GB, R)	<i>Galloperdix spadicea</i> (Gmelin)	+	+	IV	E	— do —
	Order: GRUIFORMES						
	Family: TURNICIDAE						
54.	Common Bustard-quail (GB, R)	<i>Turix suscitator</i> (Gmelin)	+	+	IV	-	— do —
55.	Sarus Crane (WB, M)	<i>Grus antigone</i> (Linn.)	+	+	IV	E	— do —
	Family: RALLIDAE						
56.	Whitebreasted waterhen (WB, M)	<i>Amaurornis phoenicurus</i> (Pinn.)	+	+	IV	-	— do —
57.	Watercock (WB, M)	<i>Gallicrex cinerea</i> (Gmelin)	+	+	IV	-	— do —
58.	Indian Moorhen (WB, M)	<i>Gallinula chloropus</i> (Linn.)	+	+	IV	-	— do —
59.	Purple Moorhen (WB, M)	<i>Porphyria porphyra</i> (Linn.)	+	+	IV	-	— do —
60.	Coot (WB, M)	<i>Fulica atra</i> Linn.	+	+	IV	-	— do —
	Family: OTIDIDAE						
61.	Lesser florican (GB, R)	<i>Sypheotides indica</i> (Miller)	+	?	I	R	
	Order: CHARADRIFORMES						
	Family: JACANIDAE						
62.	Pheasant-tailed jacana (WB, R)	<i>Hydrophasianus chirurgus</i> (Scopoli)	+	+	IV	-	— do —
63.	Bronze-winged jacana (WB, R)	<i>Metopidius indicus</i> (Latham)	+	+	IV	-	— do —
	Family: CHARADRIDAE						
64.	Redwattled lapwing (WB, R)	<i>Vanellus indicus</i> (Boddaert)	+	+	IV	-	— do —
65.	Little ringed plover (WB, R)	<i>Charadrius dubius</i> Scopoli	+	+	IV	-	— do —
66.	Curlew (WB, M)	<i>Numenius arquata</i> (Linn.)	+	+	IV	-	— do —

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act (91)	Current Status (IUCN)	Remarks
					Schedule (part)		
1	2	3	4	5	6	7	8
67.	Redshank (WB, M)	<i>Tringa totanus</i> (Linn.)	+	+	IV	-	— do —
68.	Greenshank (WB, M)	<i>Tringa nebularia</i> (Gunnerus)	+	+	IV	-	— do —
69.	Common sandpiper (WB, M)	<i>Tringa glareola</i> Linn.	+	+	IV	-	— do —
70.	Spotted sandpiper (WB, M)	<i>Tringa hypoleucos</i> Linn.	+	+	IV	-	— do —
71.	Green sandpiper (WB, M)	<i>Tringa ochropus</i> Linn.	+	+	IV	-	— do —
72.	Fantail snipe (WB, M)	<i>Capella gallinago</i> (Linn.)	+	+	IV	-	— do —
73.	Painted snipe (WB, M)	<i>Rostratula benghalensis</i> Linn.	+	+	IV	-	— do —
74.	Blackwinged stilt (WB, M)	<i>Himantopus himantopus</i> (Linn.)	+	+	IV	-	— do —
75.	Family: BURHINIDAE Stone curlew (GB, R)	<i>Burhinus oedicnemus</i> (Linn.)	+	+	IV	-	— do —
76.	Family: LARIDAE Indian river tern (WB, M)	<i>Sterna aurantia</i> Gray	+	+	IV	-	— do —
77.	Order: COLUMBIFORMES Family: PTEROCLIIDAE Painted sandgrouse (GB, R)	<i>Pterocles indicus</i> (Gmelin)	+	+	IV	-	— do —
78.	Family: COLUMBIDAE Greyfronted green pigeon (AB, R)	<i>Trenon pompadoura</i> (Gmelin)	+	+	IV	-	— do —
79.	Southern green pigeon (AB, R)	<i>Trenon phoenicoptera</i> (Latham)	+	+	IV	-	— do —
80.	Blue rock pigeon (AB, R)	<i>Columba livia</i> (Gmelin)	+	+	IV	-	— do —
81.	Ring dove (AB, R)	<i>Streptopelia decaocto</i> (Frivaldszky)	+	+	IV	-	— do —
82.	Spotted dove (AB, R)	<i>Streptopelia chinensis</i> (Scopoli)	+	+	IV	-	— do —
83.	Turtle dove (AB, R)	<i>Streptopelia tranquebarica</i> +	?		IV	-	— do —

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91) Schedule (part)	Current Status (IUCN)	Remarks
1	2	3	4	5	6	7	8
<b>Order: PSITTACIFORMES</b>							
Family: PSITTACIDAE							
84.	Alexandrine parakeet (AB, R)	<i>Psittacula eupatria</i> (Linn.)	+	+	IV	-	— do —
85.	Roseringed parakeet (AB, R)	<i>Psittacula krameri</i> (Scopoli)	+	+	IV	-	— do —
86.	Blossom headed parakeet (AB, R)	<i>Psittacula cyanocephala</i> (Linn.)	+	+	IV	-	— do —
<b>Order: CUCULIFORMES</b>							
Family: CUCULIDAE							
87.	Pied crested cuckoo (AB, M)	<i>Clamator jacobinus</i> (Bodd.)	+	+	IV	-	— do —
88.	Brainfever bird or Hawk cuckoo (AB, R)	<i>Cuculus varius</i> (Vahl.)	+	+	IV	-	— do —
89.	Indian cuckoo (AB, R)	<i>Cuculus micropterus</i> (Gould)	+	+	IV	-	— do —
90.	Plaintive cuckoo (AB, M)	<i>Caecanthis merulinus</i> (Scopoli)	+	+	IV	-	— do —
91.	Koel (AB, R)	<i>Eudynamys scolopacea</i> (Linn.)	+	+	IV	-	— do —
92.	Sirkeer cuckoo (AB, R)	<i>Taccocua leschenaultii</i> (Lesson)	+	+	IV	-	— do —
93.	Crow-pheasant (AB, R)	<i>Centropus sinensis</i> (Stephens)	+	+	IV	-	— do —
<b>Order: STRIGIFORMES</b>							
Family: STRIGIDAE							
94.	Indian Barn owl (GB, R)	<i>Tyto alba</i> (Scopoli)	+	+	-	-	
95.	Great Horned owl (GB, R)	<i>Bubo bubo</i> (Linn.)	+	+	IV	E	
96.	Spotted owlet (AB, R)	<i>Athene brama</i> (Temminck)	+	?	IV	-	
<b>Order: CAPRIMULGIFORMES</b>							
Family: CAPRIMULGIDAE							
97.	Indian jungle nightjar (GB, R)	<i>Caprimulgus indicus</i> (Latham)	+	+	IV	-	— do —
98.	Common Indian nightjar	<i>Caprimulgus asiaticus</i> (Latham)	+	+	IV	-	— do —
<b>Order: APODIFORMES</b>							
Family: APODIDAE							
99.	Indian house swift (AB, R)	<i>Apus affinis</i> (Grey)	+	+	-	-	— do —

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status (IUCN)	Remarks
1	2	3	4	5	6	7	8
100.	Palm swift (AB, R)	<i>Cypsiurus parvus</i> (Lichtenstein)	+	+	-	-	— do —
101.	Crested tree swift (AB, R)	<i>Hemiprocne longipennis</i> (Tickell)	+	+	-	-	— do —
Order: CORACIFORMES							
Family: ALCEDINIDAE							
102.	Lesser pied kingfisher (WB, R)	<i>Ceryle rudis</i> (Linn.)	+	+	IV	-	— do —
103.	Small blue kingfisher (WB, R)	<i>Alcedo atthis</i> (Linn.)	+	+	IV	-	— do —
104.	Threetoed kingfisher (WB, R)	<i>Ceyx erithacus</i> (Linn.)	+	+	IV	-	— do —
105.	Storkbilled kingfisher (WB, R)	<i>Pelargopsis capensis</i> (Linn.)	+	+	IV	-	— do —
106.	White-breasted kingfisher (WB, R)	<i>Halcyon smyrnensis</i> (Linn.)	+	+	IV	-	— do —
Family: MEROPIDAE							
107.	Small green bee-eater (AB, R)	<i>Merops orientalis</i> (Latham)	+	+	-	-	— do —
108.	Bluecheeked bee-eater (AB, R)	<i>Merops superciliosus</i> (Linn.)	+	+	-	-	— do —
Family: CORACIDAE							
109.	Blue jay or Indian roller (AB, R)	<i>Coracias benghalensis</i> (Linn.)	+	+	IV	-	— do —
Family: UPUPIDAE							
110.	Hoopoe (AB, R)	<i>Upupa epops</i> (Linn.)	+	+	-	-	— do —
Family: BUCEROTIDAE							
111.	Common grey hornbill (AB, R)	<i>Tockus birostris</i> (Scopoli)	+	+	-	-	— do —
Order: PICIFORMES							
Family: CAPITONIDAE							
112.	Coppersmith or crimson breasted barbet (AB, R)	<i>Megalaima haemacephala</i> (Muller)	+	+	IV	-	— do —
113.	Large green barbet (AB, R)	<i>Megalaima zeylanica</i> (Gmelin)	+	+	IV	-	— do —
Family: PICIDAE							
114.	Wryneck (AB, M)	<i>Jynx torquilla</i>	+	+	-	-	— do —
115.	Rufous woodpecker (AB, R)	<i>Micropternus brachyurus</i> (Vieillot)	+	+	IV	-	— do —

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status (IUCN)	Remarks
1	2	3	4	5	6	7	8
116.	Goldenbacked woodpecker (AB, R)	(Vieillot) <i>Dinopium benghalense</i> (Linnaeus)	+	+	IV	-	— do —
117.	Little green woodpecker (AB, R)	<i>Picus myrmecophonus</i> (Stressemann)	+	+	IV	-	— do —
118.	Mahratta woodpecker (AB, R)	<i>Picoides mahattensis</i> (Latham)	+	+	IV	-	— do —
119.	Pigmy woodpecker (AB, R)	<i>Picoidea nanus</i> (Vigors)	+	+	IV	-	— do —
Order: PASSERIFORMES							
Family: PITTADE							
120.	Indian pitta (GB, R)	<i>Pitta brachyura</i> (Linn.)	+	+	IV	-	— do —
Family: ALAUDIDAE							
121.	Ashycrowned finch-lark (GB, R)	<i>Eremopterix grisea</i> (Scopoli)	+	+	IV	-	— do —
122.	Rufous-tailed finch-lark (GB, R)	<i>Anomornis phoenicurus</i> (Franklin)	+	+	IV	-	— do —
123.	Crested lark (GB, R)	<i>Galerida cristata</i> (Linn.)	+	+	IV	-	— do —
124.	Indian small skylark (GB, R)	<i>Alauda gulgula</i> Franklin	+	+	IV	-	— do —
Family: HIRUNDINIDAE							
125.	Common swallow (AB, M)	<i>Hirundo rustica</i> (Linn.)	+	-	-	-	— do —
126.	Wiretailed swallow (AB, M)	<i>Hirundo smithii</i> (Leach.)	+	-	-	-	— do —
127.	Redrumped swallow (AB, R)	<i>Hirundo daurica</i> (Linn.)	+	+	-	-	— do —
Family: LANIDAE							
128.	Brown shrike (AB, M)	<i>Lanius cristatus</i> (Linn.)	-	-	-	-	— do —
129.	Baybacked shrike (AB, R)	<i>Lanius vittatus</i> (Valenciennes)	+	+	-	-	— do —
130.	Rufousbacked shrike (AB, R)	<i>Lanius schach</i> (Linn.)	+	+	-	-	— do —
131.	Grey shrike (AB, R)	<i>Lanius excubitor</i> (Linn.)	+	+	-	-	— do —
Family: ORIOLIDAE							
132.	Golden oriole (AB, M)	<i>Oriolus oriolus</i> (Linn.)	+	+	IV	-	— do —

## Appendix II (continued)

Sl No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91) Schedule (part)	Current Status (IUCN)	Remark
1	2	3	4	5	6	7	8
<b>Family: DICRURIDAE</b>							
133.	Black drongo (AB, R)	<i>Dicrurus adsimilis</i> (Bech.)	+	+	IV	-	— do —
134.	White bellied drongo (AB, R)	<i>Dicrurus caerulescens</i> (Linn.)	+	+	IV	-	— do —
135.	Racket-tailed drongo (AB, R)	<i>Dicrurus paradiseus</i> (Linn.)	+	+	IV	-	— do —
<b>Family: STURNIDAE</b>							
136.	Common myna (AB, R)	<i>Acridotheres tristis</i> (Linn.)	+	+	IV	-	— do —
137.	Pied myna (AB, R)	<i>Sturnus contra</i> (Linn.)	+	+	IV	-	— do —
138.	Brahminy myna (AB, R)	<i>Sturnus pagodarum</i> (Gmelin)	+	+	IV	-	— do —
<b>Family: CORVIDAE</b>							
139.	House crow (AB, R)	<i>Corvus splendens</i> (Viellot)	+	+	V	-	— do —
140.	Jungle crow (AB, R)	<i>Corvus macrorhynchos</i> (Wagler)	+	+	V	-	— do —
141.	Indian tree pie (AB, R)	<i>Dendrocitta vagabunda</i> (Lattham)	+	+	IV	-	— do —
<b>Family: CAMPEPHAGIDAE</b>							
142.	Indian large wood shrike (AB, R)	<i>Tephrodornis pondicerianus</i> (Gmelin)	+	+	-	-	— do —
143.	Large cuckoo-shrike (AB, R)	<i>Coracina novaehollandiae</i> (Gmelin)	+	+	-	-	— do —
144.	Scarlet minivet (AB, R)	<i>Pericrocotus flammneus</i> (Forster)	+	+	IV	-	— do —
145.	Small minivet (AB, R)	<i>Pericrocotus cinnamomeus</i> (Linn.)	+	+	IV	-	— do —
<b>Family: IRENIDAE</b>							
146.	Iora (AB, R)	<i>Aegithina tiphia</i> (Linn.)	+	+	IV	-	— do —
147.	Jerdon's chloropsis (AB, R)	<i>Chloropsis cochinchinensis</i> (Gmelin)	+	+	IV	-	— do —
148.	Green bulbul or Golden-fronted chloropsis (AB, R)	<i>Chloropsis aurifrons</i> (Temminck)	+	+	IV	-	— do —

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status (IUCN)	Remarks
1	2	3	4	5	6	7	8
	Family: PYCNONOTIDAE						
149.	Redvented bulbul (AB, R)	<i>Pycnonotus cafer</i> (Linn.)	+	+	IV	-	— do —
	Family: MUSCicapidae						
150.	Common babbler (GB, R)	<i>Turdoides caudatus</i> (Dumm.)	+	+	IV	-	— do —
151.	Jungle babbler (GB, R)	<i>Turdoides striatus</i> (Dumont)	+	+	IV	-	— do —
152.	Western redbreasted flycatcher (AB, M)	<i>Muscicapa parva</i> Bech.	+	+	IV	-	— do —
153.	Greyheaded flycatcher (AB, M)	<i>Culicicapa ceylonensis</i> (Swain)	+	+	IV	-	— do —
154.	Tickell's blue flycatcher (AB, R)	<i>Muscicapa tickelliae</i> (Blyth)	+	+	IV	-	— do —
155.	Whitethroated fantail flycatcher (AB, R)	<i>Rhipidura albicollis</i> (Vieillot)	+	+	IV	-	— do —
156.	Verditer flycatcher (AB, R)	<i>Muscicapa thalassina</i> (Swain)	+	+	IV	-	— do —
157.	Whitebrowed blue flycatcher (AB, R)	<i>Muscicapa superciliaris</i> (Jerdon)	+	+	IV	-	— do —
158.	Brown flycatcher (AB, R)	<i>Muscicapa latirostris</i> (Raffles)	+	+	IV	-	— do —
159.	Indian blacknaped monarch flycatcher (AB, R)	<i>Monarcha azurea</i> (Bodd.)	+	+	IV	-	— do —
160.	Paradise flycatcher (AB, R)	<i>Terpsiphone paradisi</i> (Linn.)	+	+	IV	-	— do —
161.	Streaked fantail warbler (AB, R)	<i>Cisticola juncidis</i> (Rafinesque)	+	+	IV	-	— do —
162.	Reed warbler (AB, R)	<i>Acrocephalus scirpaceus</i> (Herr.)	+	+	IV	-	— do —
163.	Jungle Wren-warbler (AB, R)	<i>Prinia sylvatica</i> Jerdon	+	+	IV	-	— do —
164.	Franklin's Ashy-grey wren-warbler (AB, R)	<i>Prinia hodgsonii</i> Blyth	+	+	IV	-	— do —
165.	Indian plain wren-warbler (AB, R)	<i>Prinia subflava</i> (Gmelin)	+	+	IV	-	— do —
166.	Ashy wren-warbler (AB, R)	<i>Prinia socialis</i> Sykes	+	+	IV	-	— do —
167.	Tailor Bird (AB, R)	<i>Orthotomus sutorius</i> (Pennant)	+	+	IV	-	— do —
168.	Magpie robin (AB, R)	<i>Copsychus saularis</i> (Linn.)	+	+	IV	-	— do —
169.	Black redstart (AB, R)	<i>Phoenicurus ochruros</i> (Gmelin)	+	+	IV	-	— do —
170.	Indian robin (AB, R)	<i>Saxicoloides fulicata</i> (Linn.)	+	+	IV	-	— do —
171.	Pied bush chat (AB, R)	<i>Saxicola caprata</i> (Linn.)	+	+	IV	-	— do —
172.	Brown rock chat (AB, R)	<i>Cercomela fusca</i> (Blyth)	+	+	IV	-	— do —
173.	Orange headed ground thrush (AB, R)	<i>Zosterops citrina</i> (Latham)	+	+	IV	-	— do —

## Appendix II (continued)

St. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status (IUCN)	Remarks
1	2	3	4	5	6	7	8
	Family: PARDAE						
174.	Grey tit (AB, R)	<i>Panurus major</i> (Linn.)	+	+	IV	-	— do —
	Family: SITTIDAE						
175.	Chestnutbellied nuthatch (AB, R)	<i>Sitta castanea</i> Lesson	+	+	IV	-	— do —
	Family: MORACILLIDAE						
176.	Paddyfield pipit (GB, R)	<i>Anthus novaeseelandiae</i> (Gmelin)	+	IV	-	— do —	
177.	Yellow wagtail (WB, M)	<i>Motacilla flava</i> (Linn.)	+	IV	-	— do —	
178.	Grey wagtail (WB, M)	<i>Motacilla caspica</i> (Gmelin)	+	IV	-	— do —	
179.	Pied wagtail (WB, M)	<i>Motacilla maderaspatensis</i> (Gmelin)	+	IV	-	— do —	
180.	Yellowheaded wagtail (WB, M)	<i>Motacilla citreola</i> Pallas	+	IV	-	— do —	
	Family: DICAEIDAE						
181.	Thickbellied flowerpecker (AB, R)	<i>Dicaeum agile</i> (Tickell)	+	IV	-	— do —	
182.	Tickell's Flowerpecker (AB, R)	<i>Dicaeum erythrorhynchos</i> (Latham)	+	IV	-	— do —	
	Family: NECTARINIDAE						
183.	Purplerumped sunbird (AB, R)	<i>Nectarinia zeylonica</i> (Linn.)	+	IV	-	— do —	
184.	Small sunbird (AB, R)	<i>Nectarinia minima</i> (Sykes)	+	IV	-	— do —	
185.	Purple sunbird (AB, R)	<i>Nectarinia asiatica</i> (Latham)	+	IV	-	— do —	
	Family: ZOSTEROPIDAE						
186.	White eye (AB, R)	<i>Zosterops palpebrosa</i> (Temminck)	+	IV	-	— do —	
	Family: PLOCIDAE						
187.	House sparrow (AB, R)	<i>Passer domesticus</i> (Linn.)	+	IV	-	— do —	
188.	Baya weaverbird (AB, R)	<i>Ploceus philippinus</i> (Linn.)	+	IV	-	— do —	

## **Appendix II (continued)**

## Appendix II (continued)

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status (IUCN)	Remarks
1	2	3	4	5	6	7	8
27.	John's sand boa	<i>Eryx johni</i> (Russell)	+	+	IV	-	— do —
	Family:DIPSADIDAE						
28.	Shaw's wolf snake	<i>Lycodon striatus</i> (Shaw)	+	+	-	-	— do —
29.	Common wolf snake	<i>Lycodon aulicus</i> (Linn.)	+	+	-	-	— do —
30.	Russell's or variegated	<i>Oligodon taeniatus</i> (Jerdon)	+	+	-	-	— do —
31.	Kukri snake	<i>Oligodon amoenus</i> (Shaw)	+	+	-	-	— do —
	Family:NATRICIDAE						
32.	Striped keelback snake	<i>Amphiesma stolata</i> (Linn.)	+	+	-	-	— do —
33.	Green keelback snake	<i>Macropisthodon plumbicolor</i> (Cantor)	+	+	-	-	— do —
34.	Checkered keelback snake	<i>Xenochrophis piscator</i> (Schneider)	+	+	II(II)	-	— do —
35.	Olivaceous keelback snake	<i>Arreium schistosum</i> (Daudin)	?	+	-	-	— do —
	Family:COLUBRIDAE						
36.	Common trinket snake	<i>Elaphe helena</i> (Daudin)	+	+	IV	-	— do —
37.	Rat Snake	<i>Ptyas mucosus</i> (Linn.)	+	+	II(II)	-	— do —
38.	Banded racer	<i>Argyrogena fasciolatus</i> (Shaw)	+	+	IV	-	— do —
39.	Gunther's racer	<i>Argyrogena gracilis</i> (Gunther)	+	+	IV	-	— do —
40.	Smooth snake	<i>Coronella brachyura</i> (Gunther)	?	+	IV	-	— do —
41.	Painted bronzeback	<i>Dendrelaphis pictus</i> (Gmelin)	?	+	IV	-	— do —
	42. Common Indian bronzeback	<i>Dendrelaphis tristis</i> (Daudin)	+	+	IV	-	— do —
43.	Stout sand snake	<i>Psammophis longifrons</i> (Boulenger)	?	+	IV	-	— do —
44.	Common green whip snake	<i>Ahaetula nasuta</i> (Lacep.)	+	+	IV	-	— do —
	Family: HOMALOPSIDAE						
45.	Common cat snake	<i>Boiga trigonata</i> (Schneider)	+	+	IV	-	— do —

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status	Remarks
					Schedule (IUCN)	(part)	
1	2	3	4	5	6	7	8
46.	Siebold's smooth water snake	<i>Enhydris sieboldii</i> (Schlegel)	+	+	IV	-	— do —
47.	Common krait	<i>Bungarus caeruleus</i> (Schneider)	+	+	IV	-	— do —
48.	Slender coral snake	<i>Callophis melanurus</i> (Shaw)	+	+	IV	-	— do —
49.	Common cobra	<i>Naja naja</i> (Linn.)	+	+	II(II)	-	— do —
50.	Russell's viper	<i>Vipera russelli</i> (Shaw)	+	+	II(II)	-	— do —
51.	Saw-scaled viper	<i>Echis carinatus</i> (Schneider)	+	+	IV	-	— do —
52.	Bamboo pit viper	<i>Trimeresurus gramineus</i> (Shaw)	+	+	IV	-	— do —
Class: AMPHIBIA							
Order: ANURA							
Family: BUFONIDAE							
1.	Toad	<i>Bufo melanostictus</i> (Schneider)	+	+	-	-	Present record is based on Inger & Dutta (1987)
2.	Toad	<i>Bufo stomaticus</i> (Lutken)	+	+	-	-	— do —
Family: MICROHYLIDAE							
3.	Ornate microhylid	<i>Microhyla ornata</i> (Dum. & Bibr.)	+	-	-	-	— do —
Family: RANIDAE							
4.	Skipper frog	<i>Rana cyanophlyctis</i> (Schneider)	+	+	V	-	— do —
5.	Frog	<i>Rana hexadactyla</i> (Lesson)	?	+	IV	-	— do —
6.	Frog	<i>Rana leithii</i> (Boulenger)	+	+	IV	-	— do —
7.	Frog	<i>Rana limnocharis</i> (Boie)	+	+	IV	-	— do —
8.	Bull frog	<i>Rana tigerina</i> (Daudin)	+	+	IV	-	— do —
9.	Rufescant burrowing frog	<i>Rana rufescens</i> (Jerdon)	+	?	IV	-	— do —
Family: RHACOPHORIDAE							
10.	—	<i>Polypedates maculatus</i> (Gray)	?	+	-	-	— do —

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status (IUCN)	Remarks
					(part)		
1	2	3	4	5	6	7	8
<b>Order: GYMNOPOHIONA</b>							
	Family: ICHTHYOPHIDAE						
11.	Caeclian	<i>Ichthyophis subterrestris</i> (Taylor)	+	+	-	-	— do —
<b>Class: PISCES</b>							
	Subclass: TELEOSTEI						
<b>Order: OSTEOGLOSSIFORMES</b>							
	Family: NOTOPTERIDAE						
1.	Grey feather back	<i>Notopterus notopterus</i> (Pallas)	+	+	-	c	Present record is based on Talwar & Jhingran (1991).
2.	Humped featherback	<i>Notopterus chitala</i> (Ham.)	+	+	-	c	— do —
<b>Order: ANGILLIFORMES</b>							
	Family: ANGULLIDAE						
3.	Indian long-finned eel	<i>Anguilla bengalensis</i> (Gray & Hard.)	+	+	-	c	— do —
4.	Grizzled shad	<i>Gonialosa manmina</i> (Ham.)	+	+	-	-	— do —
<b>Order: CLUPEIFORMES</b>							
	Family: CLUPEIDAE						
5.	Catla	<i>Catla catla</i> (Ham. - Buch.)	+	+	-	c	— do —
6.	Cauvery white carp	<i>Cirrhinus cirrhosus</i> (Bloch)	+	+	-	Threatened	Talwar (1991)
7.	Reba carp	<i>Cirrhinus reba</i> (Ham.)	+	+	-	c	Talwar & Jhingran (1991)
8.	Kolas	<i>Gonoproctopterus kolas</i> (Sykes)	+	+	-	c	— do —
9.	Scarlet banded barb	<i>Puntius amphibius</i> (Val.)	+	+	-	-	— do —
10.	Fire fin barb	<i>Puntius ticto</i> (Ham.)	+	+	-	c	— do —
11.	Stigma barb	<i>Puntius sophore</i> (Ham.)	+	+	-	c	— do —
12.	Olive barb	<i>Puntius sarana</i> (Ham.)	+	+	-	c	— do —
13.	Fringed-lipped peninsular carp	<i>Labeo fimbriatus</i> (Bloch)	+	+	-	Threatened	Talwar (1991)

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past	Present	Wildlife	Current	Remarks
			Record	Record	Act ('91)	Status	(IUCN)
1	2	3	4	5	6	7	8
14.	Black rohu	<i>Labeo calbasu</i> (Ham.)	+	+	-	c	Talwar & Jhingran (1991)
15.	Deccan labeo	<i>Labeo potail</i> (Sykes)	+	+	-	Threatened	Talwar (1991)
16.	Bata labeo	<i>Labeo bata</i> (Ham.)	+	+	-	c	Talwar & Jhingran (1991)
17.	Boggut labeo	<i>Labeo bogut</i> (Sykes)	+	+	-	c	— do —
18.	Rohu	<i>Labeo rohita</i> (Ham.)	+	+	-	c	— do —
19.	Cotio	<i>Osteobrama cotio</i> (Ham.)	+	+	-	c	— do —
20.	-	<i>Osteobrama vigorsi</i> (Sykes)	+	+	-	c	— do —
21.	Sandkhola carp	<i>Thymichthys sandhol</i> (Sykes)	+	+	-	c	— do —
22.	Mahaseer	<i>Tor tor</i> (Ham.)	+	+	-	Threatened	Talwar (1991)
23.	Indian glass barb	<i>Chela laubuca</i> (Ham.)	+	+	-	c	Talwar & Jhingran (1991)
24.	Dadio	<i>Chela (Neochela) dadidurjori</i> (Menon)	+	+	-	c	— do —
25.	Bloch razorbelly minnow	<i>Salmostoma clupeoides</i> (Bloch)	+	+	-	-	— do —
26.	Large razorbelly minnow	<i>Salmostoma baccaila</i> (Ham.-Buch)	+	+	-	c	— do —
27.	Mola carplet	<i>Amblypharyngodon mola</i> (Ham.)	+	+	-	-	— do —
28.	Aspidoparia	<i>Aspidoparia morar</i> (Ham.-Buch.)	+	?	-	Locally threatened	Talwar (1991)
29.	Hamilton's barila	<i>Barilius bendelisis</i> (Ham.)	+	+	-	c	Talwar & Jhingran (1991)
30.	Barna baril	<i>Barilius bana</i> (Ham.)	+	+	-	-	— do —
31.	Danio	<i>Danio devario</i> (Ham.)	+	+	-	c	— do —
32.	Giant danio	<i>Danio aequipinnatus</i> (Maclell.)	+	+	-	c	— do —
33.	Flying barb	<i>Esox danicus</i> (Ham.)	+	+	-	-	— do —
34.	Blackline rasbora	<i>Parluciosoma daniconius</i> (Ham.)	+	+	-	c	— do —
35.	Gangetic latia	<i>Crossocheilus latius</i> (Ham.)	+	-	-	c	— do —
36.	Mullya garra	<i>Garra mullya</i> (Sykes)	+	+	-	c	— do —
37.	Gotyla	<i>Garra goryla</i> (Gray)	+	+	-	-	— do —
38.	Family: BALitoridae Striped loach	<i>Nemacheilus (Acanthocobitis) botia</i> (Ham.)	+	+	-	c	— do —

## Appendix II (continued)

## Appendix II (continued)

Sl. No.	Common Name	Scientific Name	Past Record	Present Record	Wildlife Act ('91)	Current Status (IUCN)	Remarks
					Schedule (part)		
1	2	3	4	5	6	7	8
Family: Sisoridae							
55. Gangetic goonch	<i>Bagarius bagarius</i> (Ham.)	+	=	-	-	do —	— do —
Family: Clariidae							
56. Magur	<i>Clarias batrachus</i> (Linn.)	+	+	-	c	Talwar & Jhingran (1991)	
Order: Heteropneustidae							
57. Stinging catfish	<i>Heteropneustes fossilis</i> (Bloch.)	+	+	-	c	— do —	
Order: Cyprinodontiformes							
Family: Belontidae							
58. Freshwater garfish	<i>Xenotodon cancila</i> (Ham.)	+	+	-	c	— do —	
Order: Perciformes							
Family: Ambassidae							
59. Elongated glass perchlet	<i>Chanda nama</i> (Ham.)	+	+	-	c	— do —	
60. Indian glassy fish	<i>Pseudambassis ranga</i> (Ham.-Buch)	+	+	-	c	— do —	
61. Himalayan glassy perchlet	<i>Pseudambassis baculis</i> (Ham.-Buch)	+	?	-	Locally threatened	Talwar (1991)	
Family: Nandidae							
62. Mottled mandus	<i>Nandus nandus</i> (Ham.)	+	+	-	c	Talwar & Jhungrana (1991)	
63. Chameleon fish	<i>Badis badis</i> (Ham.)	+	?	-	Locally threatened	Talwar (1991)	
Family: Mugilidae							
64. Corsula mullet	<i>Rhinomugil corsula</i> (Ham.)	+	+	-	c	Talwar & Jhingran (1991)	
Family: Gobiidae							
65. Tank goby	<i>Glossogobius giuris</i> (Ham.)	+	+	-	c	— do —	
Family: Channidae							
66. Giant snakehead	<i>Channa marilius</i> (Ham.)	+	+	-	c	— do —	
67. Banded snakehead	<i>Channa striatus</i> (Bloch.)	+	+	-	c	— do —	

## Appendix II (continued)

**Abbreviations and symbols used:** Symbols: Present +; Absent A; Endangered E; Rare R; Vulnerable V; Indeterminate I; Common c; Not known (-).  
 Water bird migratory WB, M; Water bird resident WB, R; Bird of prey migratory BOP, M; Bird of prey resident BOP, R; Bird of prey local  
 migratory BOP, LM; Ground bird resident GB, R; Arboreal bird migratory AB, M; Arboreal bird resident AB, R.

### **APPENDIX III LIST OF LOCALLY EXTINCT/RARE/ENDANGERED VERTEBRATE SPECIES**

A)	<b>MAMMALIA</b>		
1)	Wild buffalo <i>Bubalus bubalis</i> (Linn.)	C)	<b>REPTILIA</b>
2)	Swamp Deer or Barasingha <i>Cervus duvauceli</i> Cuv.	9)	Crocodile <i>Crocodylus palustris</i> Lesson
3)	Nermada rat <i>Rattus rattus nerbadae</i> Hinton	10)	Indian monitor lizard <i>Varanus bengalensis</i> (Daudin)
		11)	Python <i>Python molurus</i> (Linn.)
B)	<b>AVES</b>	D)	<b>AMPHIBIA</b>
4)	Lesser florican <i>Sypheotides indica</i> (Muller)	12)	Rufescant burrowing frog <i>Rana rufescens</i>
5)	Falcon <i>Falco biarmicus jugger</i> Gray		
6)	Peregrine falcon <i>Falco peregrinus</i> Tustall	E)	<b>PISCES</b>
7)	Spotted owllet <i>Athene brama</i> (Temminck)	13)	Aspidoparia <i>Aspidoparia morar</i> Heckel
8)	Great Horned Owl <i>Bubo bubo</i> (Linn.)	14)	Chameleon fish <i>Batis batis</i> (Ham.)

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